

**BY ORDER OF THE
BASE COMMANDER**



**GRAND FORKS AIR FORCE BASE
INSTRUCTION 21-106**

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Maintenance

FUNCTIONAL CHECK FLIGHT PROGRAM

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

1. General.

1.1. This instruction prescribes the procedures and responsibilities to accomplish a Functional Check Flight (FCF), an Operational Check Flight (OCF), a High Speed Taxi Check (HSTC), and in-flight operational checks to ensure aircraft airworthiness in accordance with applicable technical orders (TO) at Grand Forks Air Force Base. This instruction also prescribes continuation training requirements and the procedures for certifying FCF aircrews.

1.2. FCF certified aircrews will be certified to perform FCF flights, OCF flights, and HSTC at Grand Forks Air Force Base.

1.3. This instruction consolidates guidance from various sources into a single source document.

1.4. References for this instruction include: TO 1-1-300, *Acceptance/Functional Check Flights and Maintenance Operational Checks*; TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies and Procedures*; TO 1C-135A-6, *Aircraft Scheduled Inspection and Maintenance Requirements, Section II Part C, Conditions Requiring Check Flights*; TO 1C-135-6CF-1, *Acceptance and/or Functional check Flight Procedures Manual*; AFI 11-2KC-135V3, *C/KC-135 Operations Procedures*; AFI 21-101, AMC Supp, *Maintenance Management of Aircraft*; and AFI 11-401, *Flight Management*.

2. Administration.

2.1. The MXG/CC and the OG/CC have joint responsibility for effective management of the wing's FCF program.

2.2. The MXG/QA will be the maintenance focal point for FCF, OCF, and HSTC sorties. QA will appoint a primary and an alternate person to accomplish the duties.

2.3. The OG/CC will appoint, and designate in writing, an FCF Officer In Charge (OIC). This will normally be the Chief of Standardization/Evaluation. The FCF OIC will be qualified and trained in accordance with AFI 21-101. The FCF OIC will be the operations group point of contact (POC) for all FCF/OCF/HSTC issues and will report these directly to the OG/CC.

2.4. The FCF OIC will direct the FCF program administration, training programs, and FCF operations. Specific responsibilities for the FCF OIC are described in AFI 21-101 and AMCI 21-101.

2.5. Conditions which require FCF and OCF flights are outlined in TO 1C-135A-6, Section II, Part C.

2.5.1. For the purpose of the FCF program, the term "Programmed Depot Maintenance (PDM)" includes scheduled depot overhaul and major scheduled aircraft modifications. Unscheduled depot rework is not considered PDM and does not require a full FCF, but may require an OCF.

3. Waiver Authority.

3.1. The 319 ARW/CC delegates waiver authority to the 319 OG/CC for all aspects of FCF/OCF sorties flown by 319 ARW aircrew.

3.2. The FCF OIC will brief the 319 OG/CC and the FCF aircrew on all issues regarding waiver(s), if applicable.

3.3. The 319 OG/CC, after being presented with the aircraft status and with the recommendation of the FCF OIC, will make the final determination to fly a specific FCF/OCF aircraft with an authorized waiver.

4. Aircrew Selection and Training.

4.1. FCF crews will be selected and designated, in writing, by the OG/CC. OGV will document FCF certification on an AF Form 1381, **USAF Certification of Aircrew Training**, and will place it in each individual's Flight Evaluation Folder. OGV will also submit an AMC Form 41, **Flight Authorization**, to the member's unit of assignment or attachment to update the Aviation Resource Management System (ARMS). In addition, OGV will document "FCF Certified" on the Performance Qualification & Authorization (DPQA) letter. The FCF OIC will maintain a current list of FCF certified crewmembers, and send a copy to MXG/QA.

4.2. 319 OSS/OST and the FCF OIC will develop and maintain a certification and continuation training program for FCF/OCF/HSTC certified crewmembers. Continuity binders will be developed and maintained at the 319 OSS/OST.

4.2.1. Initial certification training, as a minimum, will consist of a review of all applicable TOs and regulatory guidance, an instructor led discussion of the applicable TOs and regulations, and one full profile FCF/OCF sortie. The preferred method will be to train and certify FCF crewmembers on an FCF/OCF sortie. The engine shutdown portion of the FCF checklist will be accomplished in the simulator. Consideration should be given to adding a simulator training period.

Engines will not be shutdown in-flight unless required by the FCF/OCF. All training will be documented in the OST training folder.

4.2.2. FCF/OCF certified crew members from other units will be considered certified to perform FCF/OCF missions for the 319 ARW with the approval of the OG/CC and the recommendation of the FCF OIC. If additional training is required, it will be accomplished and documented in accordance with paragraph [4.2.1](#).

4.2.3. The number of trainees on a given sortie is at the discretion of the FCF OIC. First time FCF/OCF pilots will not be scheduled together on an actual FCF/OCF sortie.

4.2.4. Loss of FCF/OCF currency will be updated by flying with an instructor of like specialty on a FCF/OCF flight, a FCF/OCF currency sortie, or completing the full FCF/OCF checklist in the simulator. Particular emphasis will be placed on applicable TOs and other guidance, in particular TO 1C-135A-6 procedures. Navigators may be trained and have their currency updated by an FCF/OCF certified pilot.

5. Operational Procedures.

5.1. The requirements for Acceptance Check Flights (ACF) will normally not be met by aircraft at Grand Forks AFB; therefore ACF will not be accomplished by 319 OG aircrews. FCF flights will be flown by FCF certified crews. If an FCF is required and a certified crew is unavailable, the OIC will coordinate with the OG/CC to issue written certification on the AMC Form 41, designating the most qualified crew available. OCF flights will be accomplished by experienced aircrews (not required to be FCF certified). OCFs flown to check primary aircraft systems as defined in TO 1-1-300 require an instructor pilot to be at a set of controls until the OCF portion of the flight has been completed. OCFs required as a result of air refueling boom maintenance will be accomplished by an instructor boom operator.

5.2. Conditions requiring FCF/OCF/HSTC sorties will be in accordance with TO 1C-135A-6 and AFI 11-2KC-135V3. The 319th Aircraft Maintenance Squadron (AMXS) or 319th Maintenance Squadron (MXS) senior maintenance representative will provide the 319th Maintenance Operations Squadron (MOS) Scheduling Element with the flight profile required to accomplish the check flight or HSTC (see [Attachment 1](#)). The 319 MOS Scheduling Element will coordinate the flight with 319 OG/OGV.

5.3. A pre-briefing will be conducted prior to each FCF/OCF/HSTC sortie. As a minimum, the following will attend FCF/OCF/HSTC pre-briefs: applicable production superintendents, appropriate maintenance technician(s), 319 MXG/QA, FCF OIC, a member of the aircrew who initially experienced the problem (if available), and a member of the FCF aircrew.

5.4. The applicable production superintendent will brief the FCF crew on the following: purpose of flight, previous maintenance history, open discrepancies on the aircraft, and the system(s) or equipment requiring the check flight.

5.5. The fuel load for all FCF flights will be 60,000 pounds. Deviations to this will be coordinated with the FCF crew, production superintendent, and a QA representative. Fuel loads for OCF flights may vary and will be dictated by mission requirements. A QA weight and balance representative will confirm the aircraft weight and balance documents.

5.6. Weather restrictions are in accordance with TO 1-1-300. More restrictive weather conditions may be required, and the FCF OIC will make those recommendations to the OG/CC. The OG/CC will determine the weather restrictions no later than the duty day prior to the flight.

5.7. Normally, FCF/OCF flights should be conducted within designated check flight airspace. However, since Grand Forks AFB does not have such airspace, FCF/OCF flights will be flown over sparsely populated areas.

5.8. Flight crew duty day will be limited to 12 hours on all FCF/OCF missions.

5.9. Aircraft AFTO Form 781A, **Maintenance Discrepancy and Work Document**, will be documented in accordance with TO 00-20-5.

5.10. QA will maintain an FCF log, certification letters, and AMC Form 41. AF Form 2400, **Functional Check Flight Log**, will be filed in the jacket file.

5.11. An FCF/OCF aircraft will not be signed off by the FCF crew unless all discrepancies which caused the FCF/OCF have been resolved. Outstanding issues will be discussed and resolved with all applicable parties involved during the post-FCF/OCF briefing. The aircraft commander at maintenance debrief will ensure that the aircraft status is clearly documented in the AFTO Form 781, and maintenance personnel understand the status of the aircraft and requirements for changing the status.

5.12. The decision to perform an HSTC is at 319 MXG/CC and 319 OG/CC, or equivalents' discretion IAW AMCI 21-101. After a decision is made to complete an HSTC, QA will coordinate with applicable maintenance supervision and maintenance members (i.e. production and AFSC specific maintainers). The FCF crew will discuss the HSTC plans with maintenance, including emergency procedures, taxi route, fuel load, and other pertinent information. A brief synopsis will be provided by QA to the MXG and OG commanders on the results of the taxi check.

5.13. Fuel loads for all HSTCs will be the minimum practical to accomplish the checkout. Minimum fuel loads will prevent unnecessary brake/tire wear. However, enough fuel will be on board to execute takeoff, fly a normal pattern, and land with applicable reserves.

6. Scheduling.

6.1. The FCF OIC is the single point of contact for all FCF/OCF/HSTC scheduling issues.

6.2. Due to the very soft scheduling of FCF/OCF flights, aircrew will not be scheduled for the flight until the aircraft is ready and the airspace is scheduled. The flying schedule will be annotated with the date and planned times by wing scheduling. Aircrew will be assigned and scheduled on the flying schedule by the FCF OIC through the applicable squadron scheduling, to which the aircraft commander is assigned.

6.2.1. Wing scheduling will assign mission numbers and symbols for all FCF/OCF flights.

6.2.2. Flight authorizations for FCF/OCF flights will be published by the unit the sortie is assigned.

MARK F. RAMSAY, Colonel, USAF
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Attachment 1**FUNCTIONAL CHECK FLIGHT CHECK SHEET**

1. Procedures: FCF/OCF/HST Tail # _____ Date: _____

1.1. Purpose of Flight:

1.2. Previous maintenance problems and discrepancies recorded on the aircraft and the system or equipment relating to the check flight:

1.3. Review aircraft weight and balance documents:

2. A senior maintenance representative from the Aircraft Maintenance Unit will inform the 319 MXG/QA office of all check flights.